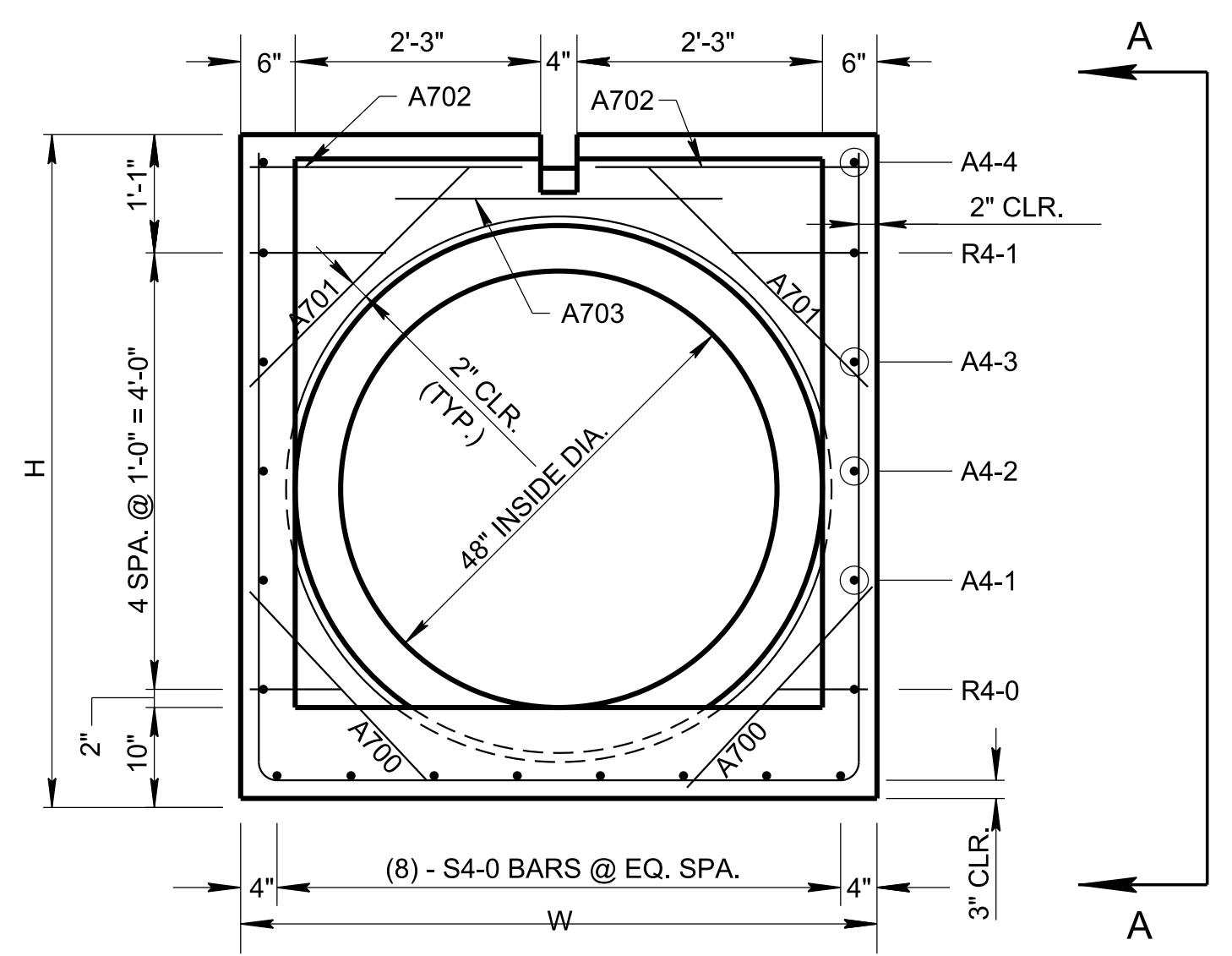
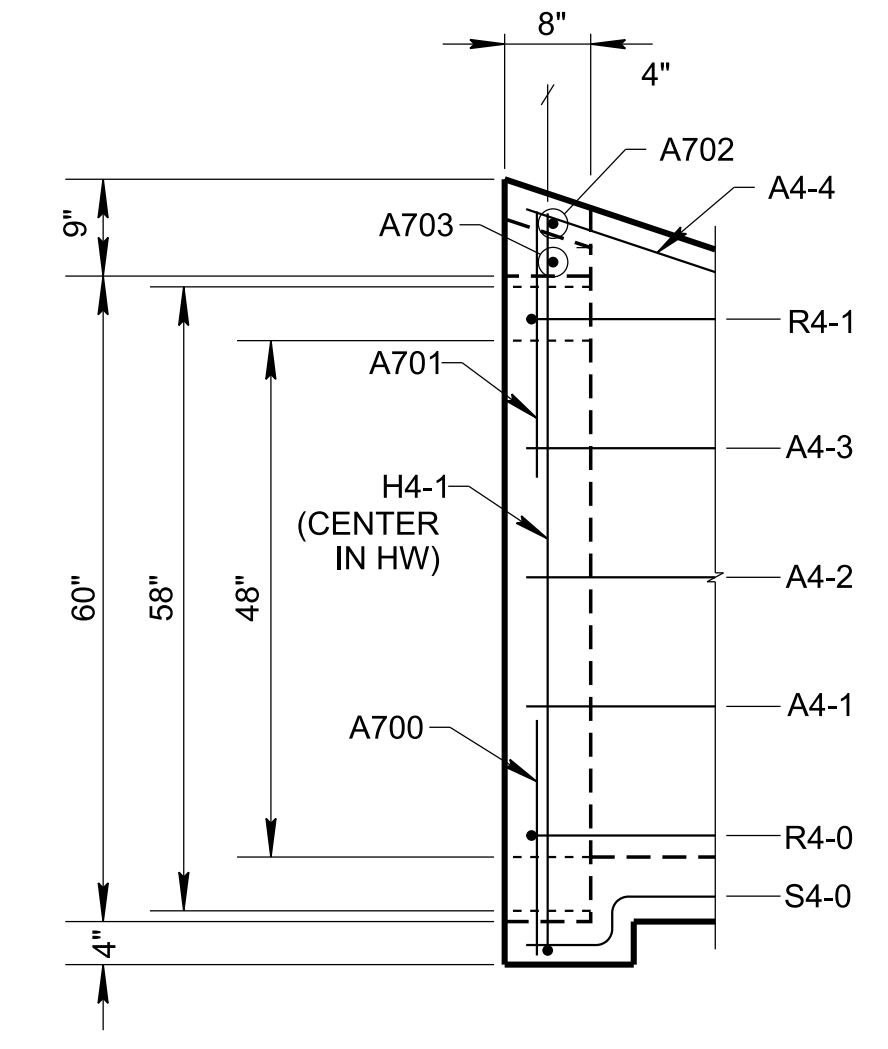


**ISOMETRIC VIEW**

NOTES:  
 DIMENSION L4 OMITTED FOR 3:1 AND 4:1 SLOPES  
 SEE STD. DWG. D-PE-99 FOR STEEL PIPE GRATE DETAIL  
 3/4" CHAMFER REQUIRED ON ALL EXPOSED EDGES



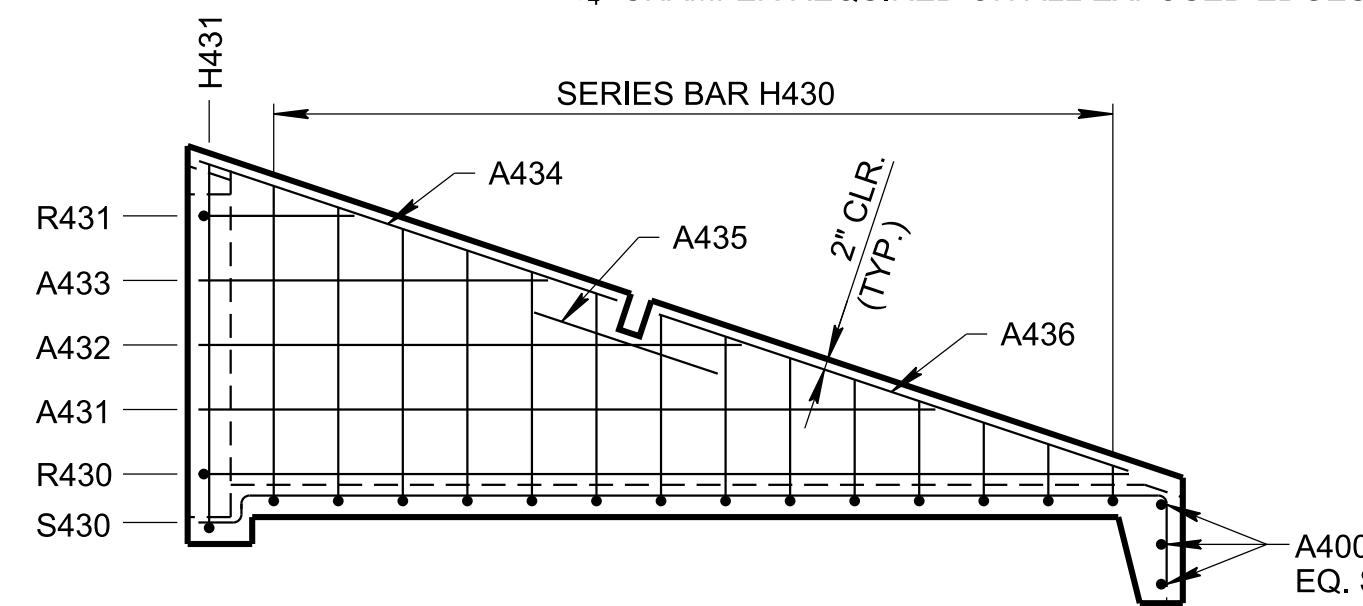
**ELEVATION**



**PARTIAL VIEW A-A**

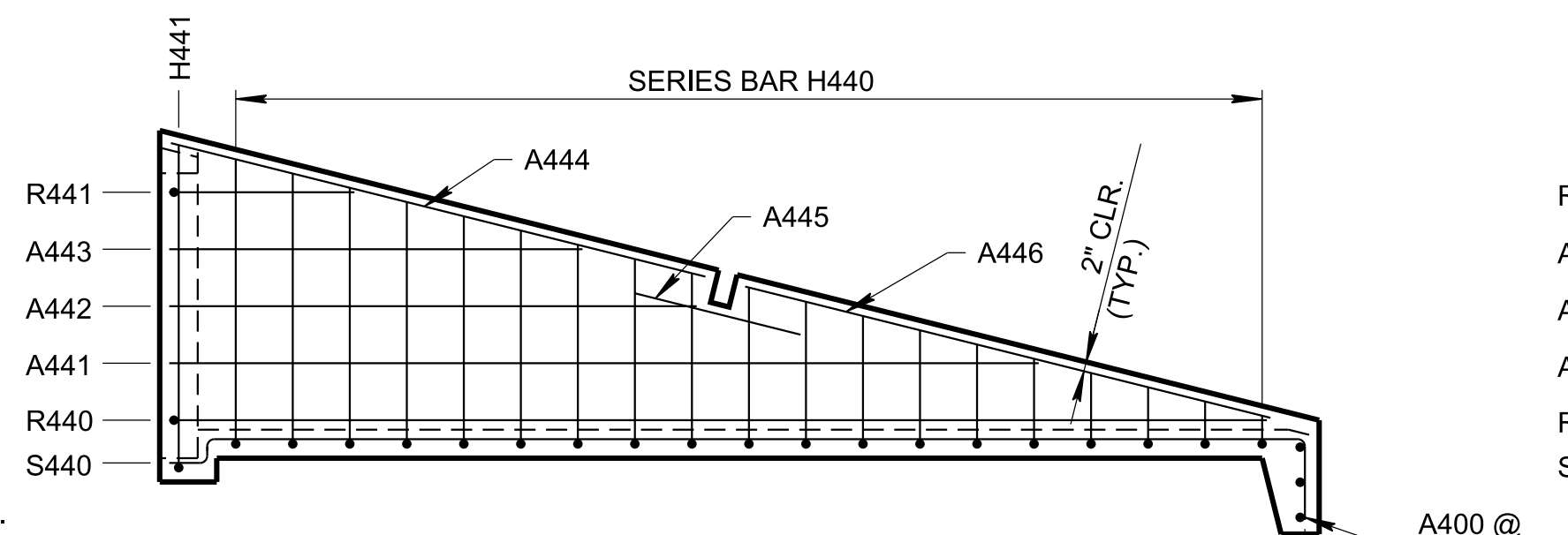
**HEADWALL DETAILS**

NOTES: INSTALL BARS A700 & A701 AT 45°  
 SEE GENERAL NOTE (C)



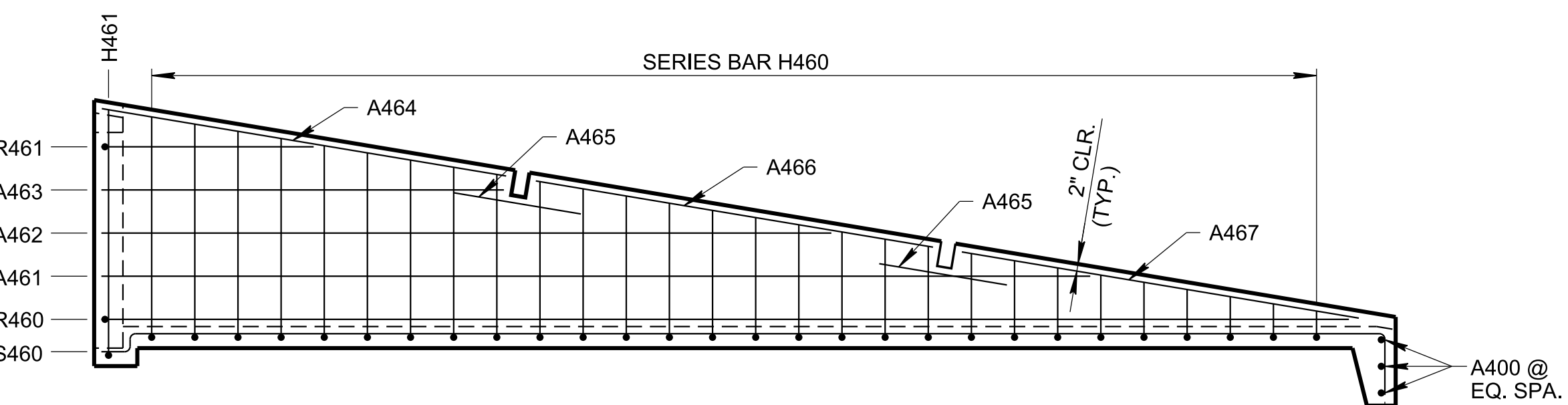
**3:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



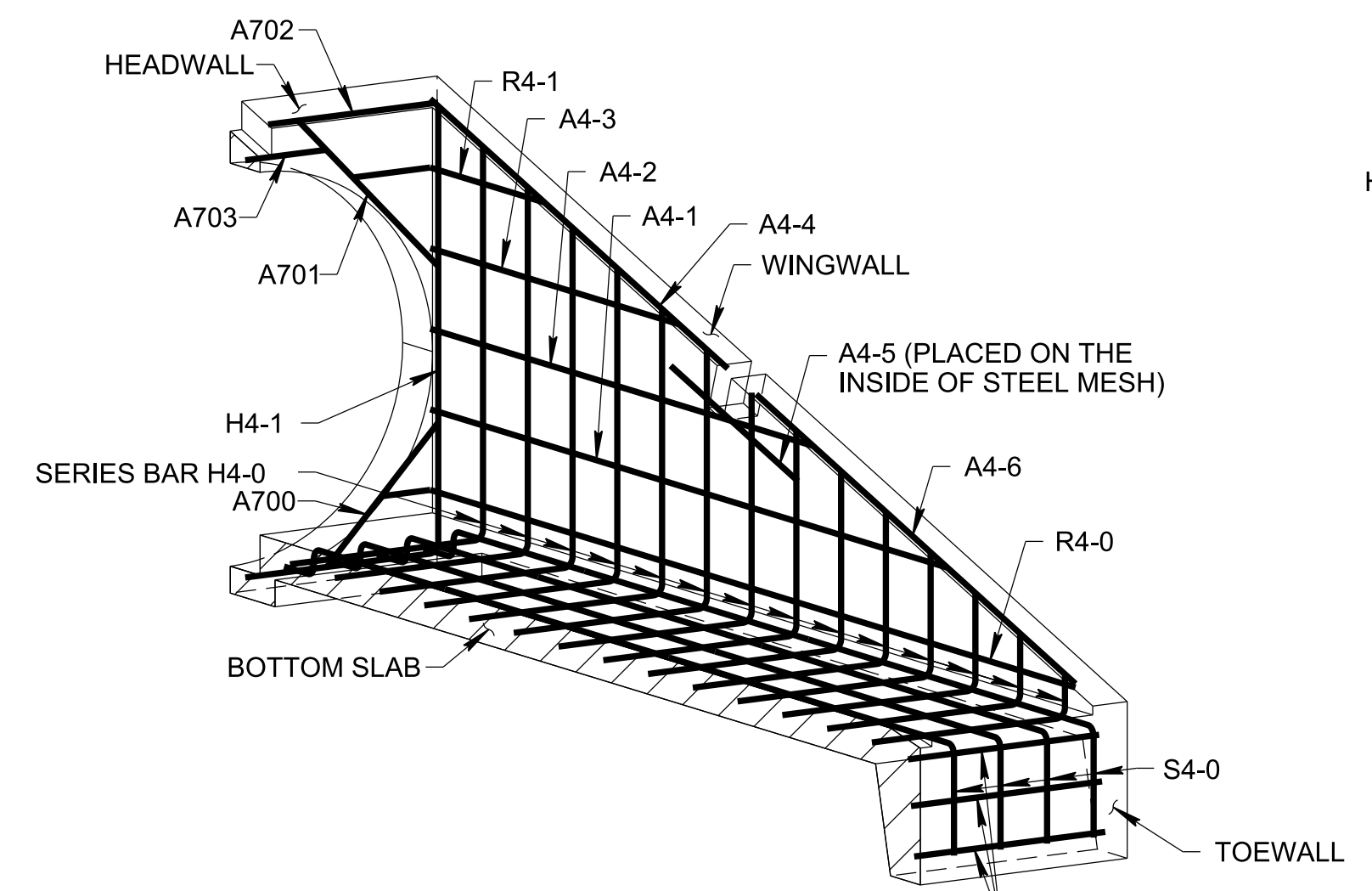
**4:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



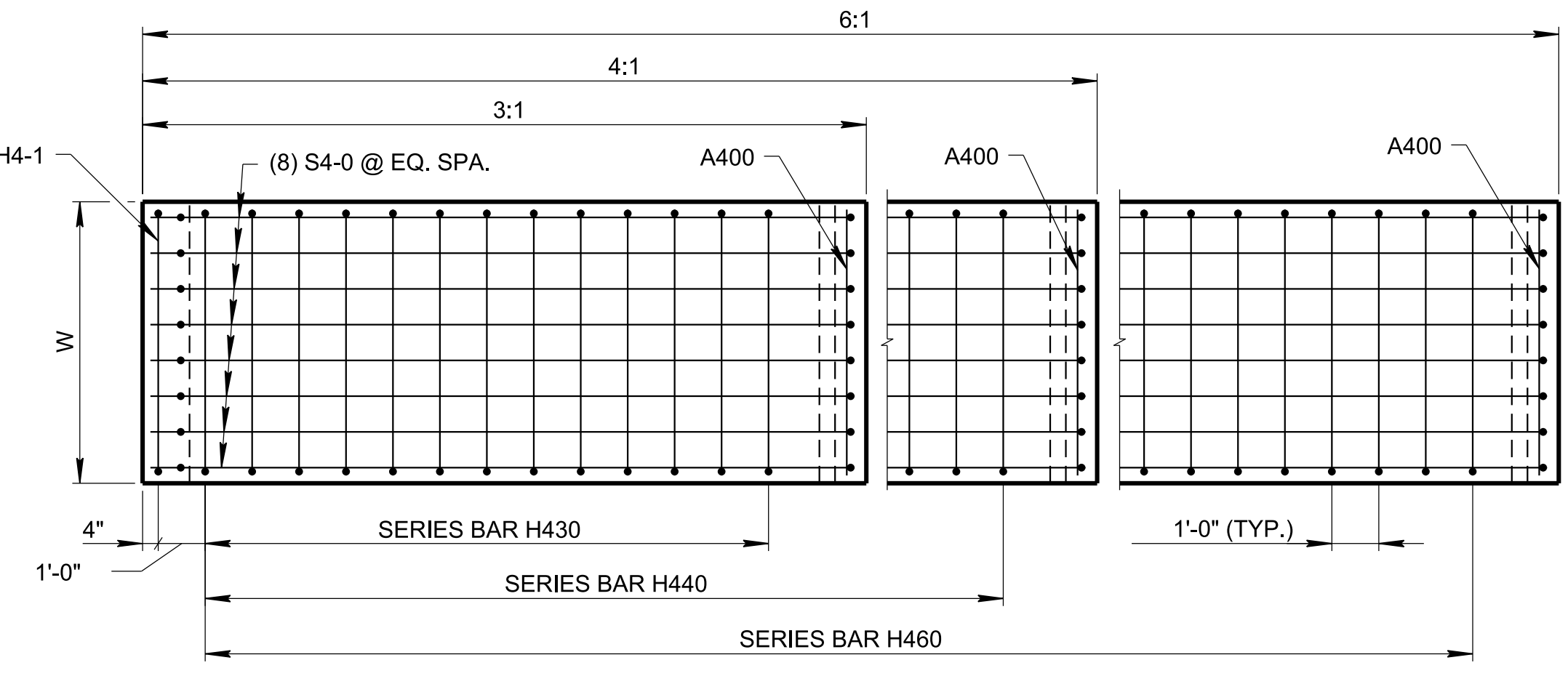
**6:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



**ISOMETRIC HALF-SECTION SHOWING REINFORCEMENT**

(3:1 SHOWN, 4:1 & 6:1 SIMILAR)  
 SEE GENERAL NOTE (C)



**BOTTOM SLAB PLAN**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.

DIMENSIONS AND QUANTITIES FOR ONE ENDWALL 48" PIPE											
SLOPE	CONCRETE ENDWALL DIMENSIONS					W	STRUCTURAL STEEL PIPE DIMENSIONS		ESTIMATED QUANTITIES		
	H	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>		LG	WG	CLASS "A" CONC. CU. YD.	STEEL BAR REINF. LB.	STRUCTURAL STEEL LB.
3:1	6' - 1"	15' - 5"	16' - 3"	7' - 4 7/8"	-	5' - 10"	16' - 1 7/8"	1 @ 5' - 10"	3.79	333	167
4:1		20' - 4"	20' - 11 1/2"	10' - 3 3/4"	-		20' - 10 3/8"	1 @ 5' - 10"	4.83	420	203
6:1		30' - 2"	30' - 7"	10' - 0 3/4"	10' - 0 3/8"		30' - 6 3/8"	2 @ 5' - 10"	6.92	597	320

NOTE: SEE STD. DWG. D-PE-99 FOR STRUCTURAL STEEL PIPE DIMENSIONS LG & WG.

**GENERAL NOTES**

- (A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE AND ALL PRECAST 48" CONCRETE ENDWALLS (TYPE "U") FOR CROSS DRAINS ONLY. "U" ENDWALL TO BE PLACED AT 90° SKEW TO CENTERLINE. SEE STD. DWG. D-PE-99 FOR SKEWED CONNECTION DETAIL WHEN CROSS DRAIN IS NOT PERPENDICULAR TO CENTERLINE. CAST-IN-PLACE CONCRETE ENDWALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS.
- (B) SEE STD. DWG. D-PE-48B FOR BILL OF STEEL & PRECAST NOTES.
- (C) "-" IN BAR DESIGNATION REPRESENTS 3, 4 OR 6 FOR 3:1, 4:1 OR 6:1 SLOPES, RESPECTIVELY.
- (D) SPLICING OF REINFORCEMENT IS ACCEPTABLE PROVIDED THAT A MINIMUM 21" SPLICE LENGTH IS USED.
- (E) TOEWALL BACK SLOPE MAY BE CONSTRUCTED VARIABLE FROM VERTICAL UP TO 15°.
- (F) PAYMENT WILL BE MADE UNDER:
 

611-07.69	48IN ENDWALL (CROSS DRAIN) 3:1	EACH
611-07.70	48IN ENDWALL (CROSS DRAIN) 4:1	EACH
611-07.71	48IN ENDWALL (CROSS DRAIN) 6:1	EACH
- (G) THE CONTRACTOR MAY ELECT TO SUBSTITUTE AN APPROVED ALTERNATIVE DESIGN
- (H) DIMENSIONAL AND REINFORCING TOLERANCES WILL BE AS SHOWN IN STANDARD OPERATING PROCEDURE (SOP) 5-3.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE  
 STANDARD DRAWING  
 DEPARTMENT OF TRANSPORTATION

**TYPE "U" CROSS DRAIN ENDWALL FOR 48" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)**

11/8/2019 11:04:31 AM C:\Users\jj00547\Desktop\DRAWINGS FOR IB SET\DIDPE48A-20190628.dgn